

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Waldock, Clinton Scott      Examiner: Badr, Hamid R  
Serial No.: 10/567,896      Group Art Unit: 1781  
Filed: August 16, 2006      Docket No.: 1278-15  
Title: A METHOD AND APPARATUS FOR MARKING BAKERY PRODUCTS

**DECLARATION OF CLINTON WALDOCK  
PURSUANT TO 37 C.F.R. §1.132**

Mail Stop Amendment  
Commissioner for Patents  
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Sir:

I, CLINTON SCOTT WALDOCK, do hereby declare:

1. I am the inventor with respect to the above-identified United States patent application and a qualified baker and pastry cook, and have been working as such for seventeen years. I have been working in the field of food printing and the development of food inks for bakery products for eight years, in my capacity as a baker and pastry cook;
2. I have read and understand the Office Action mailed January 19, 2011 by the Patent and Trademark Office in the above-identified application, including the prior art being applied against the claims, namely McNamee et al., (GB 2,291,578, hereinafter R1), in view of Pasternak (US 4,670,271, hereinafter R2);
3. The present invention is directed to a method of marking bakery products including the step of baking and applying, before baking, an ink of specific composition and sufficiently low surface tension to prevent beading when applied. As described in the background portion of the present application, using ink to successfully mark baked goods is an improvement over prior branding. However, as described, e.g., on pages 8-

9 of the present application, printing using commercially-available (edible) ink results in bleeding over the baked goods, e.g., biscuits, so detail of the thus-printed image is lost;

4. I have surprisingly discovered by altering the solvent, glycerol and water content, bleeding of the ink can be avoided, improving quality and appearance. It is believed currently-available edible inks bleed upon printing because the ink beads on initial application and then spreads while settling into the baked goods, thus causing the unwanted, undefined, disperse area of coloring or bleeding. However, I have surprisingly discovered increasing (ethanol) solvent and glycerol content of the printing ink lowers surface tension to prevent beading on application to the baked goods, thus preventing ultimate bleeding and providing a clear image on the marked baked goods;

5. Fig. 2 of the present application shows a comparison of biscuit dough stamped with the method of the present invention compared with a commercially-available ink using a hand stamp. As can be readily seen, the method according to the present invention provides a printed biscuit displaying a clear, finely-detailed image (A) while stamping with the commercially-available ink results in bleeding over the biscuit and loss of image detail (B). This comparison was carried out under my direction and control;

6. Prior to the present invention, it was not possible to produce a clear, printed or marked baked good without scorching the image onto the bakery product thus adversely

affecting the taste of the baked goods. In this regard, glycerol is required to help dry the dye pigment as thin film but nevertheless must be in sufficiently low concentration to prevent fouling of the printing head. Without glycerol, dye pigment dries as powder during baking;

7. As discussed in the present application, previously-available inks were found to "bleed" or disperse into surrounding areas when applied to a bakery product. This is due to the surface tension of the ink forcing the ink to form beads when applied to a bakery product. However, I have found by altering the solvent composition, the surface tension of the ink can be lowered. An ink with a lower surface tension is less likely to form beads when applied to a bakery product and therefore does not bleed into surrounding areas;

8. Paragraph 7 of the Office Action states that R1 implicitly recognizes the surface tension phenomenon which causes "beading," i.e., formation of tiny droplets of ink, when the ink is applied to the surface of unbaked dough. Further, given this implicit recognition and the disclosure in R1 of an edible marking material having an aqueous or organic medium such as ethanol (i.e. a low surface tension liquid miscible with water), it is then asserted it would be obvious any marking material used for printing on a baked product should have a low surface tension as recited in amended Claim 1;

9. However, as pointed out above, the formation of "beading" of ink on the surface of unbaked dough results in the subsequent image formed on the baked dough being blurry and unclear. R1 makes no mention of any problem regarding the clarity of the resultant image, or any methods to ensure a clear image. Indeed, R1 states that small markings can be made "down to at least 1.7 mm in height" (page 4, line 33). I consider a lower limit of marking of 1.7 mm to result in lines that are unacceptably broad for use in marking bakery products. This indicates to me that the marking material disperses on contact with the dough and does not allow for more than the simplest marking to be made. The method or ink of R1 does not appear to be usable to show complex patterns, pictures or trademarks, as can the ink of the current invention. In my opinion,

the problem of beading and a blurry image has not even been recognized, much less overcome by R1;

10. When selecting a medium for a marking material for dough which is to be subsequently baked, there are several factors that must be considered. Firstly, the medium must be non-toxic and edible (not foul-tasting). Secondly, the medium ideally should be cheap and readily-available. Both ethanol and water fulfill these requirements as the medium for the marking material of R1. However, there is no suggestion or implication obvious to me from the disclosure of R1 that the choice of these media is anything other than a choice of a simple, non-toxic and readily-available liquid. This is particularly so, as the preferred marking materials are similarly simple and readily-available, such as milk powder in water or glucose in water (page 3, lines 2-4 of R1);

11. It is conceded in paragraph 8 of the Office Action R1 does not disclose the ink as presently claimed. However, R2 is then referred to in paragraph 10 of the Office Action, as disclosing an edible ink having "basically the entities as presently claimed" and which overlap the claimed ranges. It is then stated in paragraph 13 of the Office Action "it would be obvious to those of skill in the art to change the component ranges depending on the type of the coloring material and the solubility of a specific dye in the carrier system". It is also considered obvious in the Office Action to manipulate the chemical entities and their ranges to change the surface tension of the resulting ink depending on the end use of the ink;

12. However, when I consider the disclosure of R2, it shows the ink is not applied to a dough product, but rather to cake icing, chocolate or confectionary products. These products are much higher in sugar and/or fat content compared to bread dough, pastry or even biscuit dough and thus are likely to have different surface properties. Therefore, in my opinion, I would expect the ink of R2 to behave in a different manner in terms of beading when applied to a bakery product rather than a confectionary sheet, due to the different surface properties;

13. Ink for marking a bakery dough product must be sufficiently robust to survive the baking process, including high humidity during proving, high temperatures during

baking, and movement of the bakery dough as it rises. As a person skilled in the art of baking, I find no motivation to even consider the ink of R2 for use in marking a product which will be baked, as the ink of R2 is designed for use at room temperature only;

14. Indeed, the inks of R2 are often transferred to the product from the application of pressure to a transfer sheet which is covered with the ink in a dried form. This is a very different application compared to applying a liquid ink to a dough product, and further suggests to me the ink of R2 is designed for a very different purpose than marking a bakery dough prior to baking;

15. Additionally, even if R1 had implied an ink with a low surface tension is required for use on bakery dough, there is still no suggestion the ink of R2 has a suitable low surface tension. Indeed, the ink of R2 appears to have, as the essential component, propylene glycol, which is considered in the field to be a high surface tension liquid. It is also clear surface tension is not a consideration for the ink of R2 when applied in dried form;

16. As noted above, in paragraph 10 of the Office Action, it is considered the ink composition of R2 "clearly overlaps" the ranges of the claimed invention, i.e., Claim 1. However, this consideration is clearly incorrect. R2 discloses a sucrose content of 1-5% (see column 16, line 44 & Claim 8), whereas Claim 1 requires 6-20% sucrose. Furthermore, R2 discloses less than 1% food coloring (see column 16, line 47 & Claim 8), whereas Claim 1 requires 1-20% coloring agent;

17. Even if R1 indicated use of a low surface tension ink, and even if it was decided to utilize the ink of R2, substantial modification of the ink of R2 would still be required. The propylene glycol would need to be replaced by a low surface tension solvent, and the sucrose and coloring agent content would need to be increased. Therefore, in my opinion, it is not obvious to a person skilled in the field, such as myself, to follow this pathway from the combined disclosures of R1 and R2 and arrive at the claimed invention.

18. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and

further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing therefrom.

Dated:

29/3/11



Clinton Scott Waldock